WHAT IS CLAIMED IS:

1. A method for multitone processing an N level digital image to produce an M level digital image wherein M<N, comprising the steps of:

a) determining M reconstruction levels based on the gray level distribution of the N level image; and

b) applying multilevel dithering to the N level digital image using the M reconstruction levels to produce the M level digital image.

2. The method claimed in claim 1, wherein the determining step comprises performing a K-means clustering operation on the N level digital image, wherein K = M.

3. The method claimed in claim 1, wherein the determining step comprises forming a histogram of the N level digital image and locating M levels corresponding to the M most prominent peaks in the histogram.

4. The method claimed in claim 1, wherein the first and last levels of the M levels are predetermined.

5. The method claimed in claim 4, wherein the first level is zero.

6. The method claimed in claim 4, wherein the last level is the maximum possible level.

7. The method claimed in claim 1, wherein the N-level digital image has multiple channels and the k-means clustering and multi-level dithering is performed on each of the multiple channels independently.

8. The method claimed in claim 1, wherein the N-level digital image has multiple channels and the K-means clustering is performed in the multi-channel space and multi-level vector dithering is used.

9. The method claimed in claim 1, wherein the multi-level dithering is vector error diffusion.

10. The method claimed in claim 7, wherein the multi-level dithering is vector error diffusion.

11. The method claimed in claim 8, wherein the multi-level dithering is vector error diffusion.

12. A computer program product for performing the method of claim 1.